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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,550	03/27/2001	Oded Melamed	P- 674550	9025
23494	7590	10/11/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			DEPPE, BETSY LEE	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/674,550

Applicant(s)

MELAMED ET AL

Examiner

Betsy L. Deppe

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed August 1, 2005 have been fully considered but they are not persuasive.
2. In response to applicant's first argument on page 5 that the output  $u_k$  is not the portion of the positive-frequency edge signal, the Examiner is not asserting that output  $u_k$  is a signal portion with the positive-frequency edge signal. Instead, Figure 4 of Abe teaches a circuit comprised of a LPF 263 (which reads on "a narrow band pass filter" in claim 1, lines 3-4) provides the signal to the complex square computing circuit 264 (which reads on "a non-linear transformer" as recited in claim 1, lines 6-10) and the output of LPF 263 includes a portion of the positive-frequency edge (see Figure 9 and column 6, line 64 - column 7, line 25). Therefore, this argument is not persuasive and the rejection is not withdrawn.
3. In response to applicant's second argument on page 5 regarding the inherent use of the imaginary component, the output of complex square computing circuit 264 ( $u_k$ ) is a complex sequence (see column 5, lines 45-48) which inherently/implicitly includes a real and imaginary component. Therefore, complex square computing circuit 264 is "providing" an imaginary component thereby reading on the claim limitation. Furthermore, since  $u_k$  (which includes an imaginary component) is processed to

determine (i.e. "retrieve") the timing phase error (and subsequently, the sampling clock signal),  $u_k$  reads on the recited "timing retrievable signal." Therefore, Abe discloses a non-linear transformer as recited in claim 1.

### ***Claim Objections***

4. Claim 1 is objected to because of the following informalities: "said" on line 9 should be "a". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Abe (US Patent No. 6,148,037 cited in the Office Action mailed September 30, 2004).
7. With regard to claims 1 and 6, Figure 4 of Abe discloses the claimed invention including a narrow band pass filter (263) and a non-linear transformer (264) wherein the non-linear transformer is adapted to square the signal portion thereby providing a complex signal having a real and an imaginary component and provide the imaginary component as the timing-retrievable signal. (See column 5, lines 39-67) Since the output of the complex square computing circuit ( $u_k$ ) is a complex sequence, it is inherent that it includes a real and imaginary component and that the imaginary component is subsequently processed to retrieve timing information.

8. With regard to claims 2 and 7, Abe discloses the claimed invention including a loop filter. (See 268 in Figure 8)
9. With regard to claims 3, 4, 8 and 9, Figure 9 of Abe discloses the recited limitations.

### ***Conclusion***


10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272 - 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Betsy L. Deppe  
Primary Examiner  
Art Unit 2637